

IT IS CLAIMED:

- 1     1.     A measuring and mixing apparatus, comprising:  
2             a first vessel having at least one sensor to determine an amount of liquid in the  
3     first vessel;  
4             a second vessel having at least one sensor to determine an amount of liquid in  
5     the second vessel;  
6             an aspirator that produces reduced pressure in the second vessel as a first fluid  
7     flows through the aspirator to the first vessel;  
8             a fluid inlet in the second vessel that allows a second fluid to enter the second  
9     vessel; and  
10            a fluid conduit connecting the first vessel and the second vessel.
- 1     2.     The apparatus of claim 1 further comprising a first valve to control fluid flow  
2     through the fluid conduit.
- 1     3.     The apparatus of claim 1 further comprising a second valve to control fluid  
2     flow of the second fluid into the second vessel.
- 1     4.     The apparatus of claim 1 further comprising a controller that controls the first  
2     valve and the second valve.
- 1     5.     The apparatus of claim 1 wherein the first vessel and the second vessel each  
2     have a gas exhaust conduit and a valve to control gas flow through the gas exhaust  
3     conduit.
- 1     6.     The apparatus of claim 1 wherein the first vessel and the second vessel each  
2     have a gas supply and a valve to control gas flow through the gas supply.
- 1     7.     The apparatus of claim 1 wherein the first vessel and the second vessel are  
2     elongated in a vertical direction and each has an upper portion and a lower portion,  
3     the aspirator connects to the upper portion of the first vessel and the upper portion of

4 the second vessel and the fluid conduit connects to the lower portion of the first vessel  
5 and the lower portion of the second vessel.

1 8. A method of measuring and mixing a first liquid and a second liquid,  
2 comprising:  
3 flowing a first liquid into a first vessel to produce a reduced pressure in a  
4 second vessel;  
5 flowing a second liquid into the second vessel;  
6 stopping the flow of the second liquid into the second vessel when a  
7 predetermined amount of the second liquid is reached in the second vessel;  
8 opening a fluid conduit between the first vessel and the second vessel;  
9 drawing the second liquid from the second vessel through the aspirator into the  
10 first vessel; and  
11 flowing the first liquid from the first vessel through the fluid conduit into the  
12 second vessel.

1 9. The method of claim 8, wherein the first liquid flowing into the first vessel  
2 produces a reduced pressure in the second vessel using an aspirator. .

1 10. The method of claim 8 further comprising stopping the flow of the first liquid  
2 when the amount of liquid in the first vessel reaches a predetermined amount.

1 11. A method of measuring and mixing a first liquid and a second liquid,  
2 comprising:  
3 introducing the first liquid into a first vessel and introducing the second liquid  
4 into a second vessel, the first vessel and the second vessel having sensors that allow  
5 detection of the amount of liquid in the first vessel and in the second vessel;  
6 aspirating the second liquid from the second vessel to the first vessel thereby  
7 causing the first liquid to flow from the first vessel to the second vessel.

1 12. The method of claim 11 wherein, the second liquid is introduced while the  
2 first liquid is being introduced.

1 13. The method of claim 11 wherein, the first liquid is introduced into the first  
2 vessel through an aspirator causing aspiration of the second liquid from the second  
3 vessel to the first vessel.

1 14. The method of claim 11 wherein, the second liquid is aspirated from the  
2 second vessel to the first vessel by flowing gas through an aspirator

1 15. A liquid measuring and mixing apparatus, comprising:  
2 a first measurement vessel;  
3 a second measurement vessel;  
4 an aspirator capable of producing reduced pressure in the second vessel as a  
5 first liquid flows through the aspirator to the first vessel;  
6 a fluid inlet in the second vessel that allows a second liquid to enter the second  
7 vessel;  
8 a fluid conduit connecting the first vessel and the second vessel;  
9 a first valve controlling fluid flow in the fluid conduit;  
10 a second valve that controls flow of the second liquid through the fluid inlet;  
11 a controller that controls the first valve and the second valve; and  
12 a cabinet that encloses the first vessel, the second vessel and the aspirator.

1 16. The apparatus of claim 15 wherein the cabinet also encloses a daytank and  
2 wherein the contents of the first vessel and the second vessel may be emptied into the  
3 daytank.

1 17. The apparatus of claim 16 further comprising sensors within the cabinet that  
2 sense hazardous conditions within the cabinet.

1 18. A measuring and mixing apparatus, comprising:  
2 a first vessel having at least one sensor to determine the amount of liquid in  
3 the first vessel;  
4 a second vessel having at least one sensor to determine the amount of liquid in  
5 the second vessel;

6           an aspirator that produces reduced pressure in the second vessel as a first fluid  
7 flows through the aspirator to the first vessel;  
8           a fluid inlet in the second vessel that allows a second fluid to enter the second  
9 vessel;  
10          a fluid conduit connecting the first vessel and the second vessel;  
11          wherein the first vessel and the second vessel are elongated in a vertical  
12 direction and each has an upper portion and a lower portion, the aspirator connects to  
13 the upper portion of the first vessel and the upper portion of the second vessel and the  
14 fluid conduit connects to the lower portion of the first vessel and the lower portion of  
15 the second vessel;  
16          a source of a liquid chemical that is pressurized; and  
17          wherein mixing of liquids in the first and second vessels may be performed by  
18 alternately transferring liquid from the first vessel to the second vessel and from the  
19 second vessel to the first vessel.

1   19.    The apparatus of claim 1 further comprising at least one sensor attached to the  
2 fluid conduit connecting the first vessel and the second vessel that measures a  
3 chemical concentration of fluid in the fluid conduit.  
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5   20.    The method of claim 8 further comprising measuring the chemical  
6 concentration of a fluid in the fluid conduit.

1   21.    The method of claim 11 further comprising motivating liquid to flow  
2 alternately from the first vessel to the second vessel and from the second vessel to the  
3 first vessel.

1   22.    The method of claim 21 wherein motivating liquid to flow is by alternately  
2 pressurizing the first vessel and the second vessel.